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TITLE OF THE INVENTION

ACCURATE SIGNAL DETECTION IN A WIRELESS ENVIRONMENT

This invention is claiming priority to co-pending patent application entitled RF
TRANSMITTER HAVING IMPROVED OUT OF BAND ATTENUATION having a
filing date of 1/15/04 and a serial number of 10/757,931, ^{now U.S. Patent No. 7,181,187}

11/12/07

BACKGROUND OF THE INVENTION

TECHNICAL FIELD OF THE INVENTION

This invention relates generally to wireless communication systems and more particularly to accurate signal detection by wireless communication devices operating in such wireless communication systems.

DESCRIPTION OF RELATED ART

In a wireless communication system, wireless communication devices are constantly listening to one or more wireless communication resources (e.g., radio frequency (RF) channels) to determine whether they are intended recipients of a wireless communication. In a wireless local area network (WLAN) as defined by standards, such as IEEE802.11a, b, g, Bluetooth, et cetera, wireless communication devices monitor RF frequencies for a prescribed preamble. Typically, when the wireless communication devices are in the monitoring mode (i.e., seeking the preamble), they are in a limited operational state to reduce power consumption. When the prescribed preamble is detected, the wireless communication device becomes fully operational and thus is consuming more power.

To detect a valid IEEE802.11a or g preamble, wireless communication devices employ an auto correlation function to compare receive signals (i.e., received RF signals down-converted to baseband signals) with a delayed representation of the received signals. As is known, an IEEE802.11 wireless communications are packet-based where each packet includes a preamble and data. The preamble includes a plurality of repetitive short training sequences (STS) followed by a guard interval (GI), which is followed by a